

Minería de datos y Patrones

Version 2024-I

Definiciones

[Capítulo 1]

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DSP-ASIC BUILDER GROUP

Director Semillero TRIAC

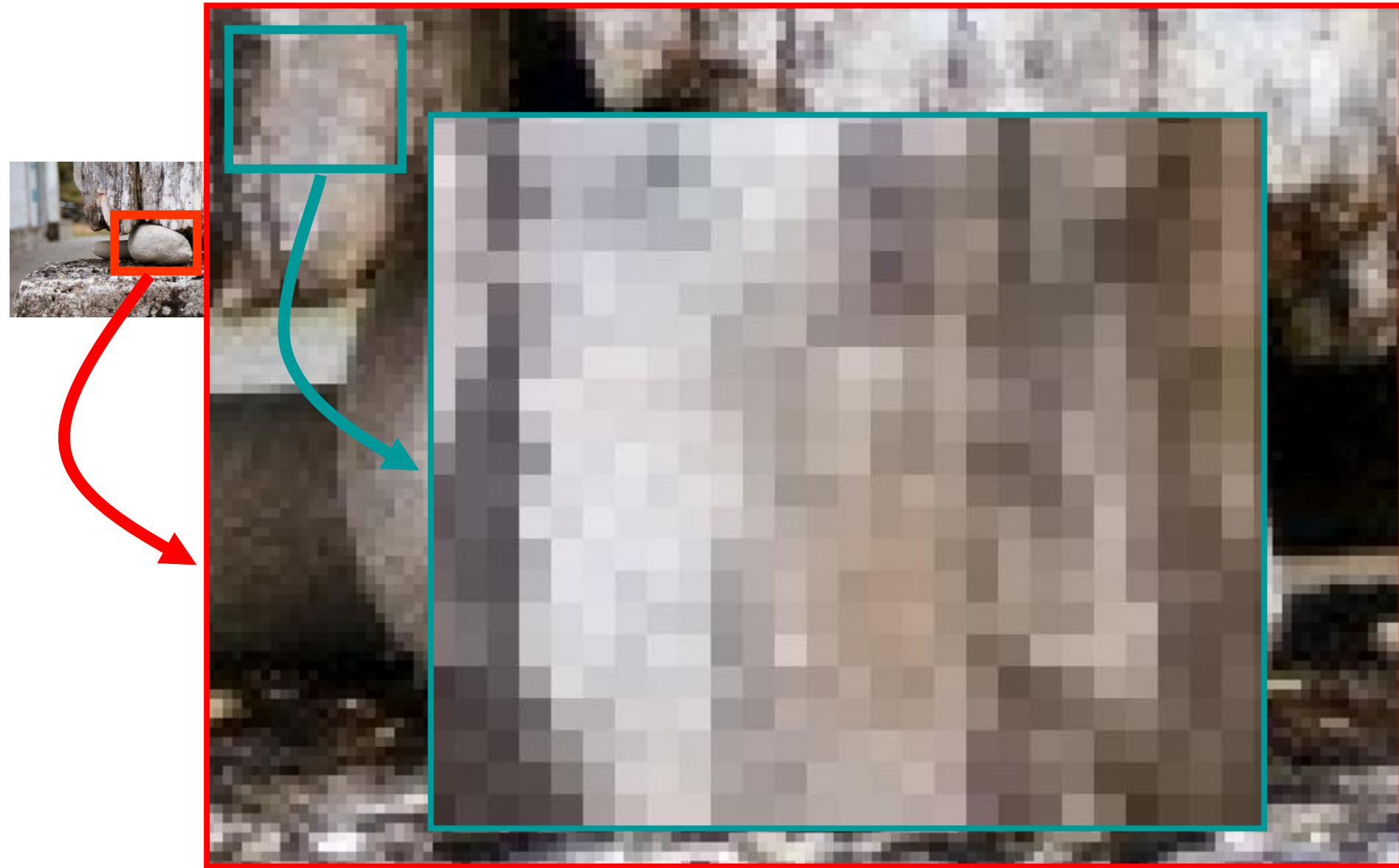
Ingeniería Electronica

Universidad Popular del Cesar

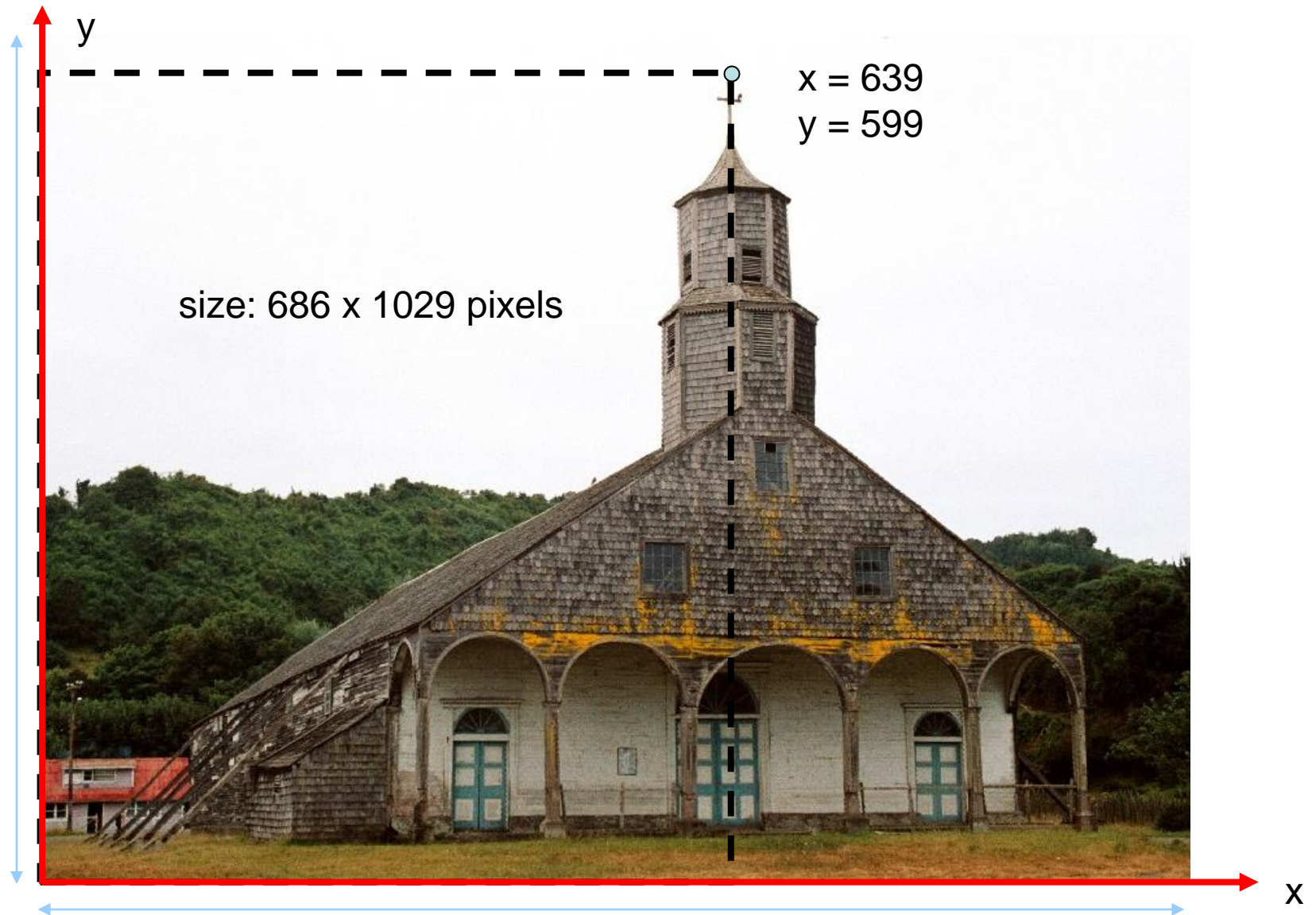
Imágenes Digitales



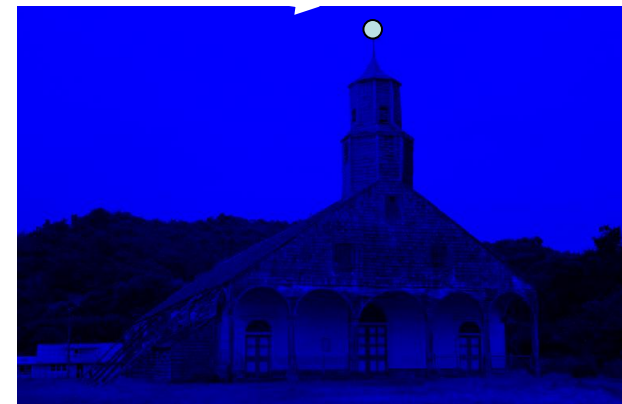
Imágenes Digitales (zoom)



Imágenes Digitales (coordenadas)



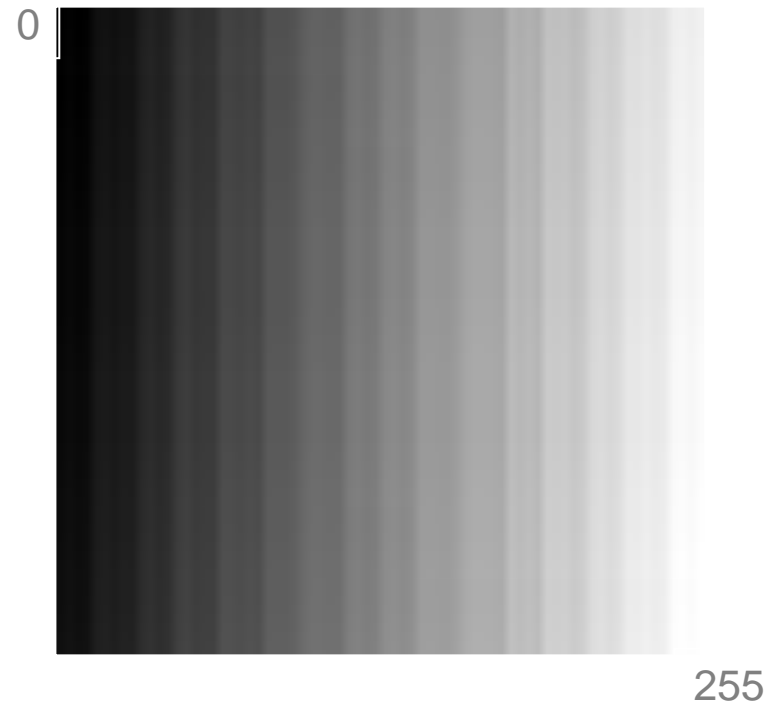
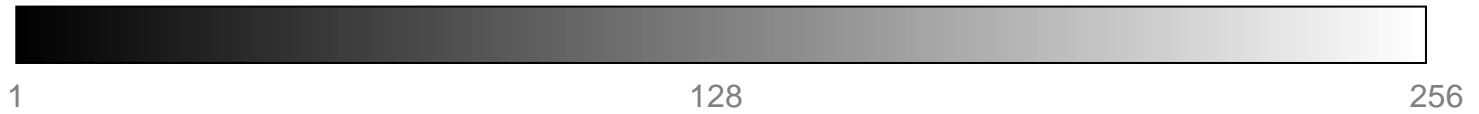
Imágenes Digitales (color)



Imágenes Digitales (color a blanco y negro)



Imágenes Digitales (tonos de gris)



Imágenes Digitales (operaciones)



Imágenes Digitales (operaciones)

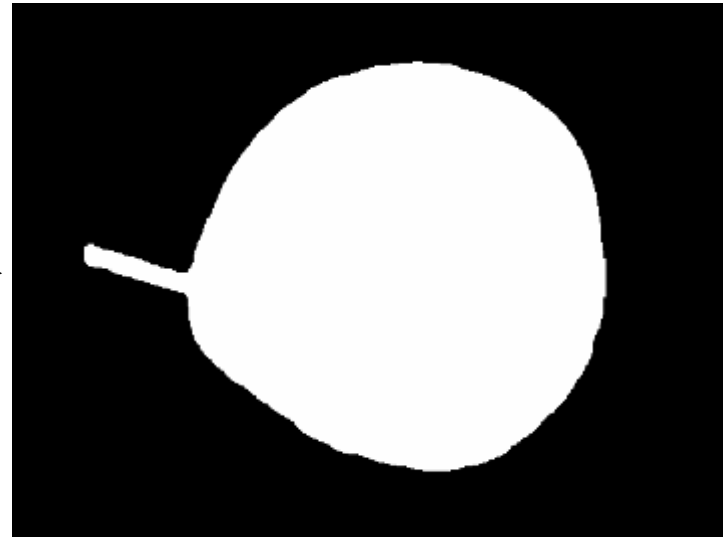


Image Processing:

The use of computer algorithms that take an image as input and return an image as output.



[INPUT]



[OUTPUT]



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The use of computer algorithms that take an image as input and return an image as output.



[INPUT]

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[INPUT]



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[INPUT]







Image Processing:

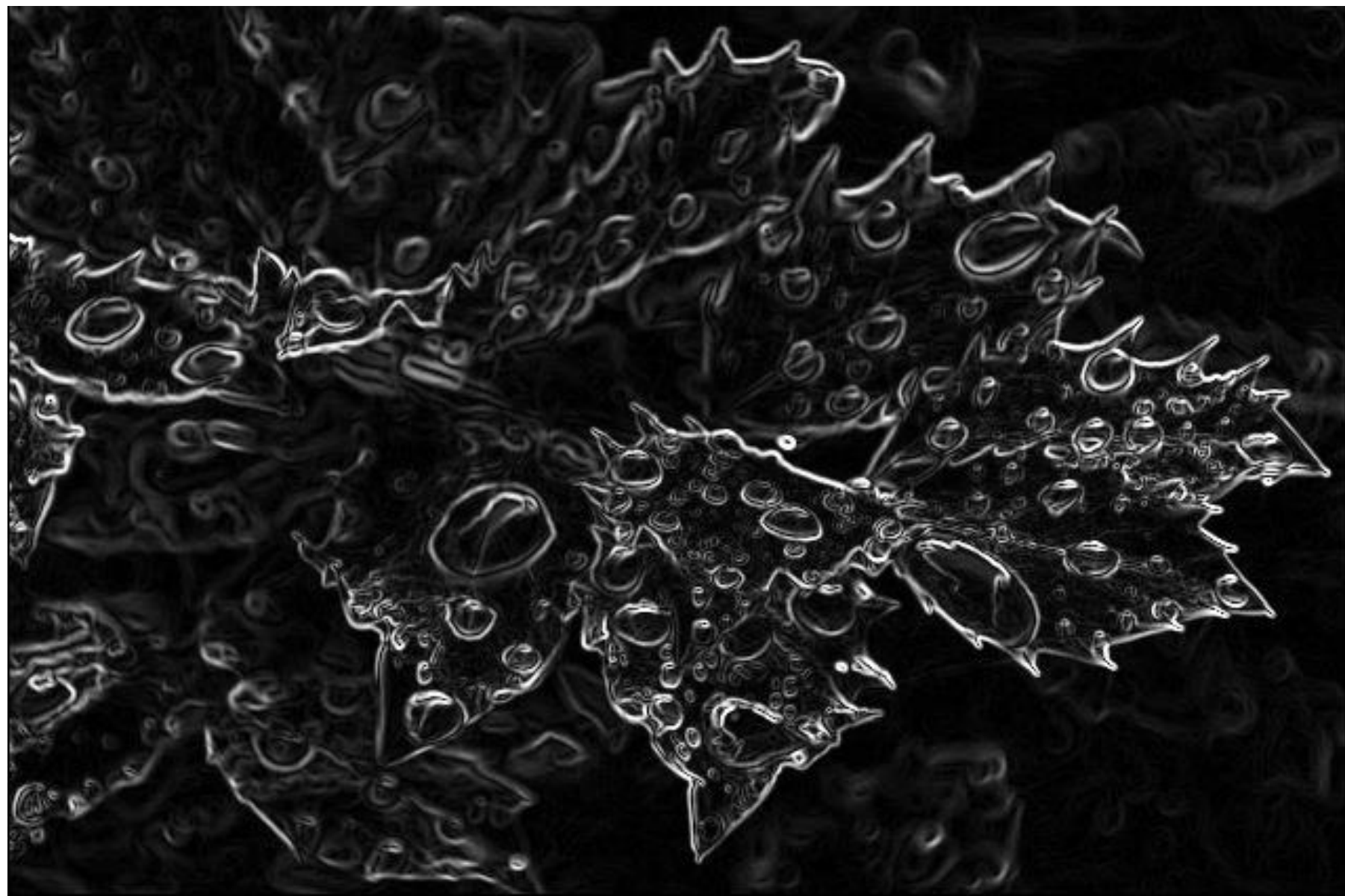
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[INPUT]







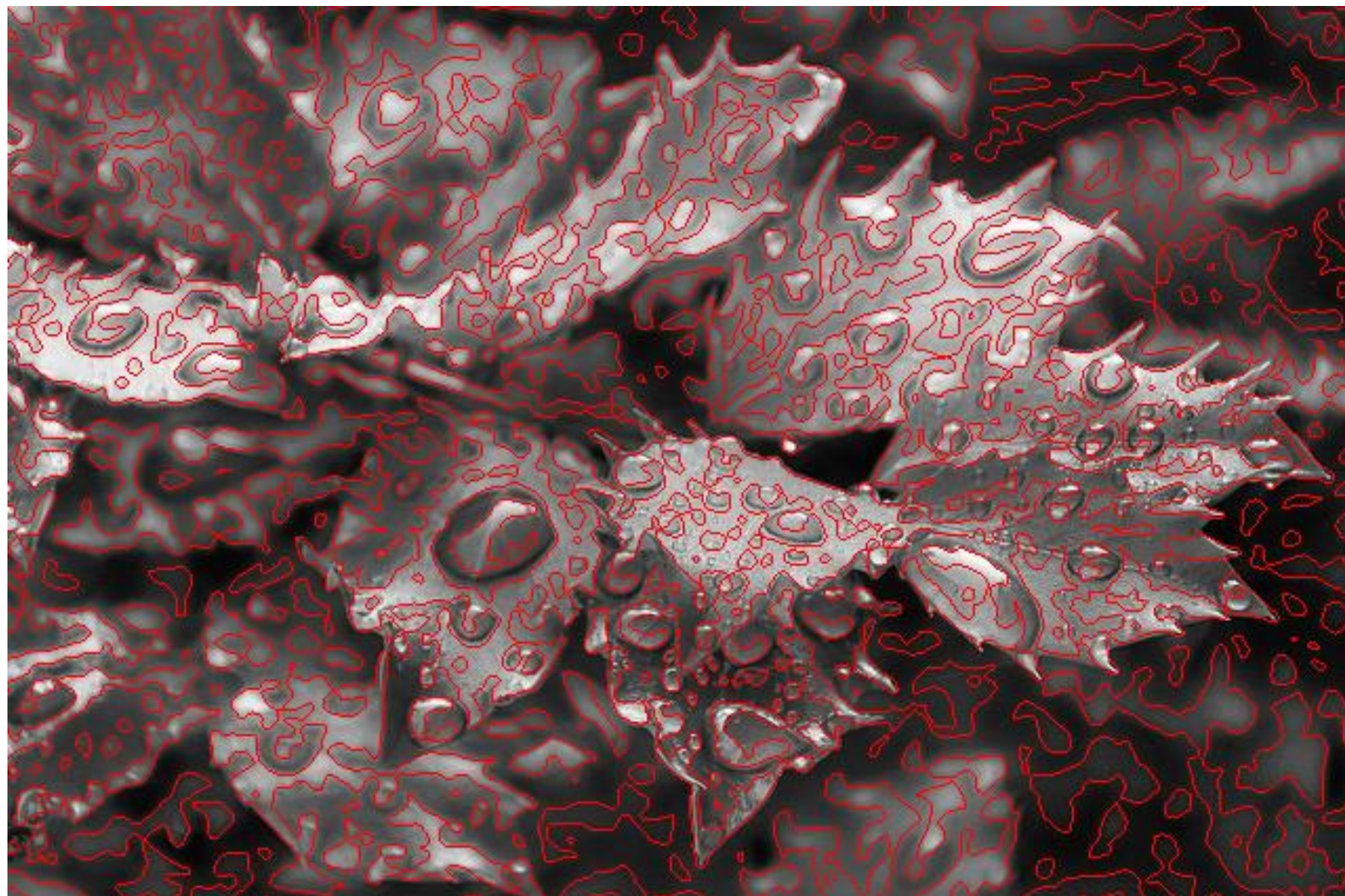


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[INPUT]







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[INPUT]

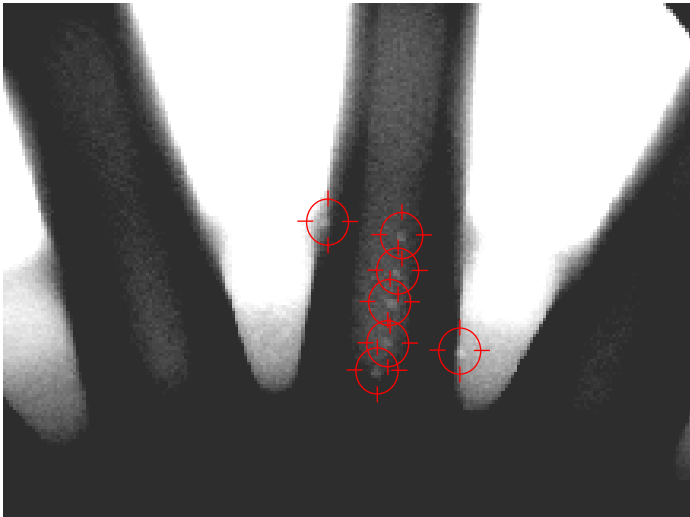




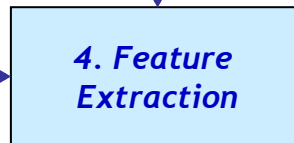
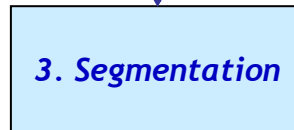
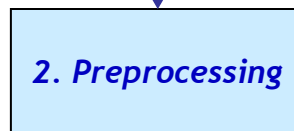
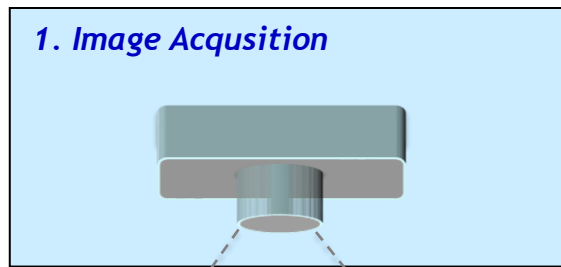


Image Analysis:

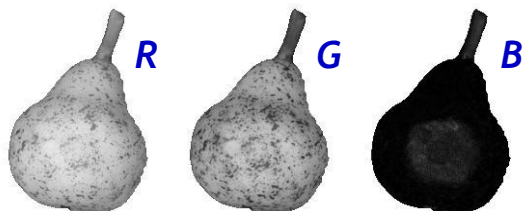
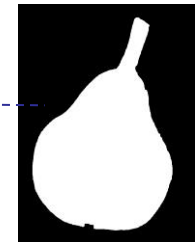
The use of computer algorithms that take an image as input and return a measurement, an interpretation or a decision.



The wheel has 7 defects



"premium"



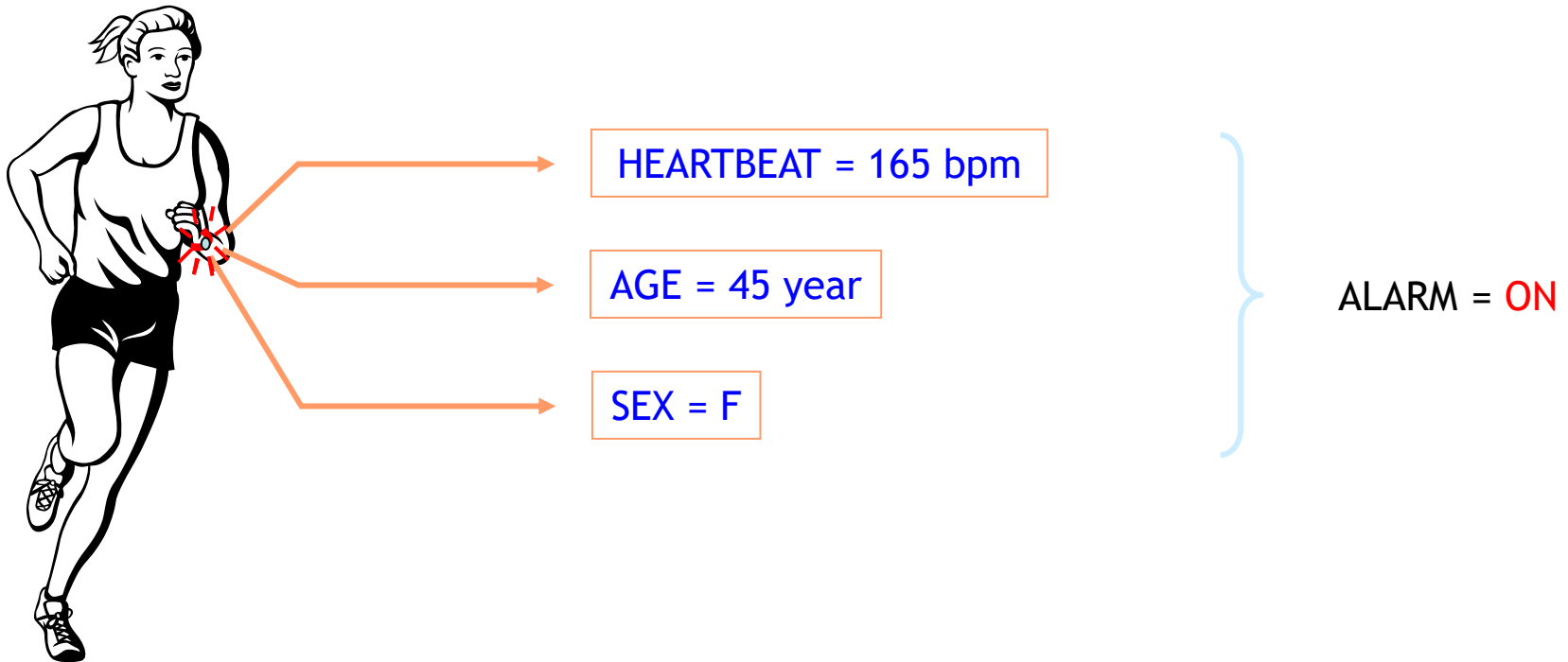
color

geometry

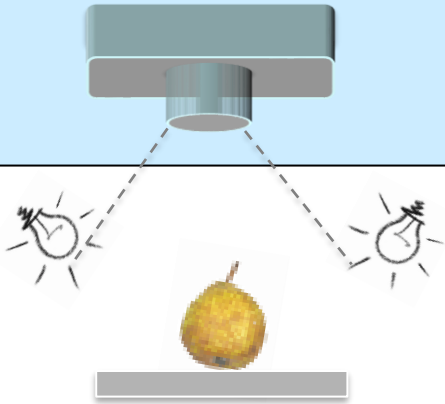
Feature	Value
Intensity (Yellow)	0.9875
# spots	542
:	:

Pattern Recognition:

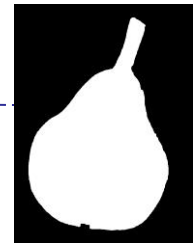
It is the science of making inferences based on data. Usually, it measures an object in order to assign it to a class.



1. Image Acquisition



2. Preprocessing



3. Segmentation

color

geometry

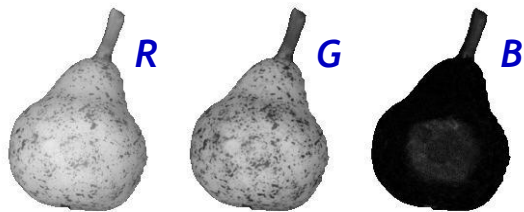
4. Feature Extraction

5. Classification

"premium"

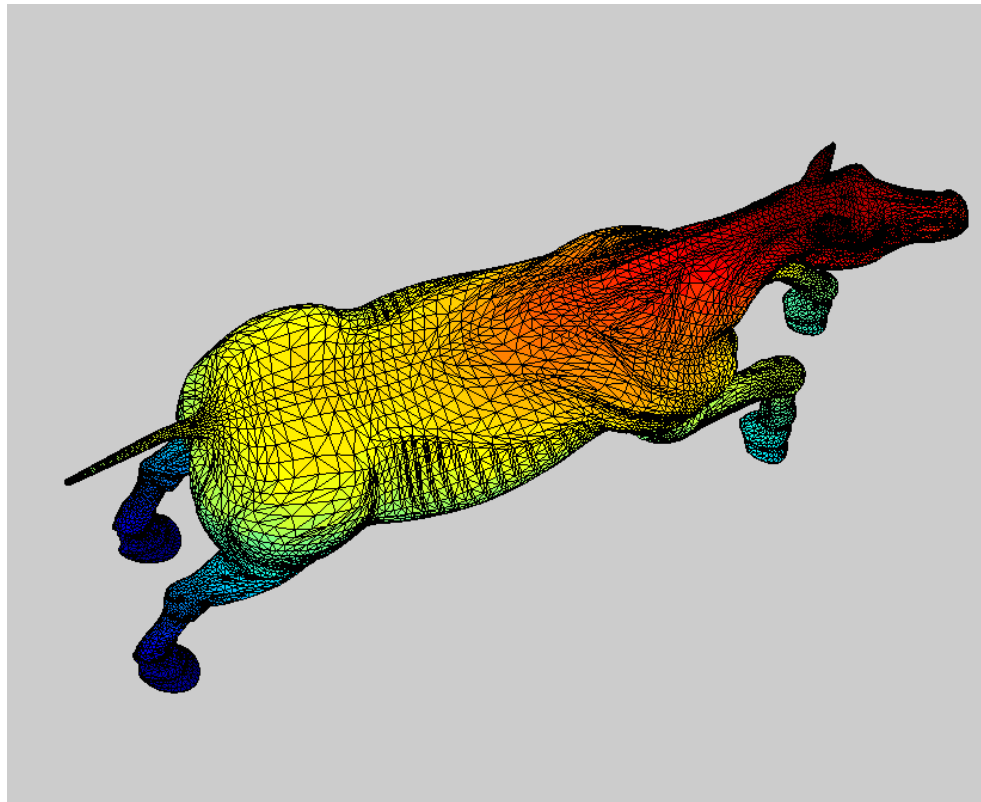
Feature	Value
Intensity (Yellow)	0.9875
# spots	542
:	:

Pattern Recognition:



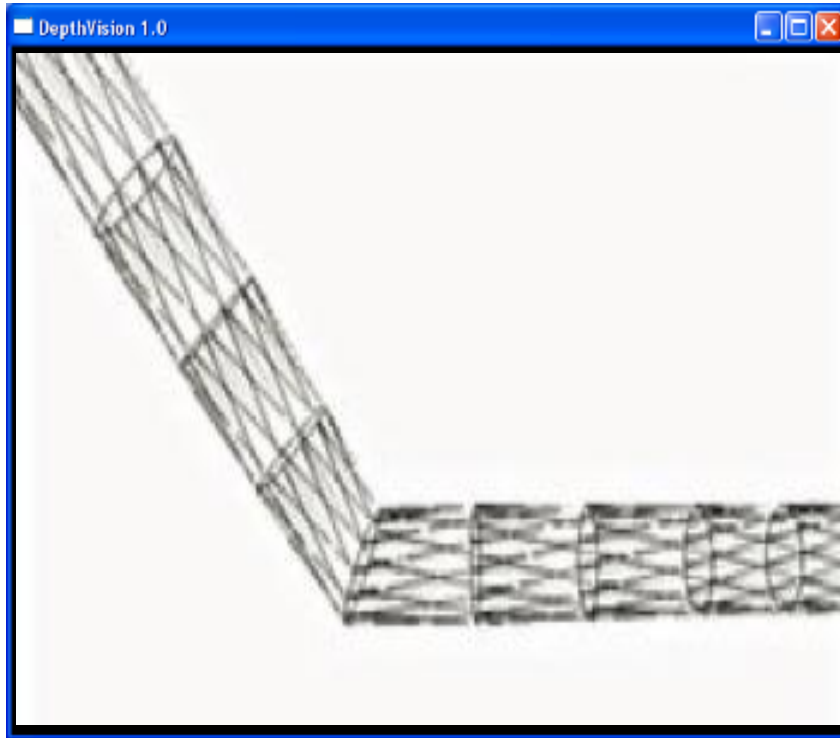
Computer Graphics:

The use of computer algorithms to generate images from models (3D objects, texture, color, illumination, etc.).



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3D mesh



Depth map



Simulation

Mery, D.; Hahn, D.; Hirschfeld N. (2005): Simulation of Defects in Aluminium Castings Using CAD Models of Flaws and Real X-ray Images. Insight, 47(10):618-624. [[PDF](#)]

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Computer Vision:

Computer vision is the science of endowing computers the ability to see.

[Faugeras]

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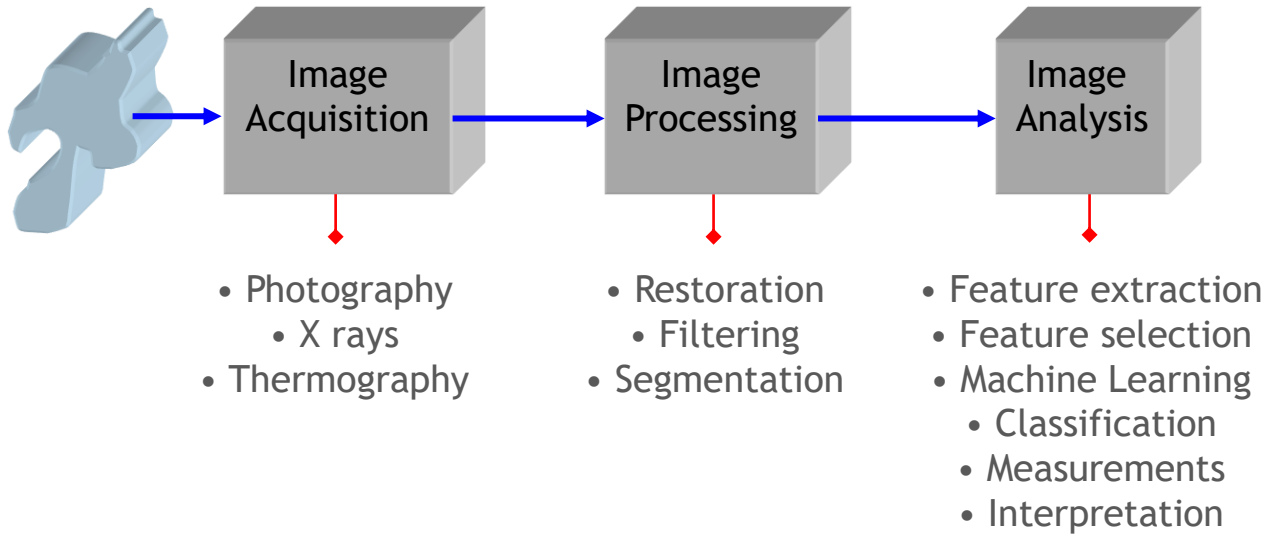
[Faugeras]

Computer vision is a field that includes methods for acquiring, processing, analyzing, and understanding images and, in general, high-dimensional data from the real world in order to produce numerical or symbolic information, e.g., in the forms of decisions.

[wikipedia]

Computer Vision System:

Object



Computer Vision System:

